AMENDMENTS TO THE SPECIFICATION

Please amend paragraph [0004] beginning on page 1, as follows:

[0004] The substrate is often retained in the exhaust pipe housing by means of a retention material or mat. The retention material is adapted to retain the substrate in a housing and to seal the gap between the substrate and the housing to force the exhaust gas through the cellular structure of the substrate.

Please amend paragraph [0020] beginning on page 3, as follows:

[0020] Referring now to Figures 1-3, an exhaust emission control device 10 is illustrated. Exhaust emission control device 10 includes an outer housing 12 having a nominal inside diameter designated by arrow 20, a substrate 14, and a retention material 16. Disposed at both ends of the device 10, i.e., an inlet end 24 and at an outlet end 26, are end-cones 22 connectable in fluid communication with an exhaust gas stream of an internal combustion engine. By way of example, device 20 is a catalytic converter, a catalytic absorber, a diesel particulate trap, a non-thermal plasma conversion device, and the like. Accordingly, by way of example, substrate 14 is a catalytic converting substrate, a catalytic absorbing substrate, a diesel particulate trapping substrate, a non-thermal plasma converting substrate, and the like.

Please amend paragraph [0029] beginning on page 6, as follows:

[0029] Outer shell 30 has an inner surface connected to an outer surface 38 of housing 12 such that inner shell 28 is between substrate 14 and the housing 12. In this manner, inner shell 28 is configured to direct the exhaust gas through substrate 14. Accordingly, the second end of inner shell 28 is preferably positioned proximate substrate 14. Inner shell 28 therefore also directs the exhaust gas away from retention material 16 and insulation 32 to protect the retention material and the insulation from erosion due to exposure to the exhaust gas.

Please amend paragraph [0030] beginning on page 6, as follows:

[0030] Preferably, the second end of inner shell 28 extends into retention material 16. The distance of the extension is preferably sufficient to direct the exhaust gas into substrate 14. For example, an extension of less than or equal about 4 millimeters ~~are~~ is employed, with an extension of greater than or equal to about 2 mm preferred. In the region where the inner shell 28 extends into the retention material 16, the compression of retention material 16 is increased, which makes retention material 16 less porous at the inlet of substrate 14 further aiding in the direction of the exhaust gas into the substrate. Disposed between the inner shell 28 and the outer shell 30 is ~~a~~ the layer of insulation 32. The insulation 32 comprises a plurality of relief ~~area~~ areas or notches 31 to allow the insulation to conform to the ~~curve~~ curvature of shells 28 and 30. The formation of notches 31 adds expense and time to the manufacture of end cones 22. Insulation 32 reduces heat loss from the exhaust gas and reduces radiated sound from device 10. For example, in the instance where substrate 14 comprises a catalyst, insulation 32 ensures that the catalyst reaches its "light-off" or activated temperature quickly during cold start-ups of the engine. Insulation 32 also aids in reducing the temperature of outer shell 30, which is useful for thermal management of the vehicle.

Please amend paragraph [0034] beginning on page 8, as follows:

[0034] More specifically, end cone insulator 40 replaces the inner shell 28. Here, end cone insulator 40 has a shape that conforms to the interior shape of the outer shell 30. Binder, or similar material, 33 enables molding or otherwise forming of insulation 32 into the desired shape forming an insulator surface 39 and provides the insulator 40 with the desired structural integrity.

Please amend paragraph [0038] beginning on page 8, as follows:

[0038] During assembly, end cone insulator 40 is either preformed and placed in outer shell 30 or is formed directly in outer shell 30. Outer shell 30 with end cone insulator 40 is then connected to outer surface 38 of housing 12. Here, an inboard end 42 of end cone insulator 40 is supported by substrate 14 and retention material 16, while an outboard end 44 of the end cone insulator 40 is connected to outer shell 30. Outboard end 44 is connected to, secured to, and/or held against (hereinafter "connected") outer shell 30 by, for example, an adhesive, a binder, by mechanical means, by radial forces (e.g., due to the size and geometry of the insulator 40 in relation to the outer shell 30), by the cooperation of the shape of the shell/insulator, and the like, as well as combinations comprising at least one of the foregoing.

Please amend paragraph [0042] beginning on page 10, as follows:

[0042] In an alternate embodiment, at outlet 26 (e.g. downstream of cells 18) does not include mesh 35. In this embodiment, the use of the mesh 35 at outlet ~~35~~ 26 is optional since it is not necessary to prevent fouling of cells 18. Thus, in this embodiment device 10 has end cone insulator 40 at inlet 24 with mesh 35, but has an end cone insulator 40 at outlet 26 without the mesh.

Please amend paragraph [0046] beginning on page 10, as follows:

[0046] Here, inboard end 42 of end cone insulator 40 is supported by substrate 14 and retention material 16, while outboard end 44 of the end cone insulator 40 is disposed between at least a portion of core 37 and outer shell 30. In this configuration, ~~, thus~~ core 37 supplements and/or eliminates the joining (mechanical, binder, and the like) of outer shell 30 and end cone insulator 40. Preferably, the core 37 extends a sufficient distance from the inlet 24 to the inlet end of the retention material 16 to provide retention of the

insulator 40, while not undesirably increasing the thermal mass of insulator 40.

Please amend paragraph [0048] beginning on page 11, as follows:

[0048] It should be recognized that housing 12 is provided above with respect to Figures 5-8 by way of example only as including identical end ~~cones~~ cone insulators 40 at inlet end 24 and outlet end 26. Of course, ~~ends~~ end cone insulators 40 having different features and construction at inlet end 24 than at outlet end 26 are contemplated.

Please amend paragraph [0049] beginning on page 11, as follows:

[0049] Housing 12 is also discussed above with respect to Figures 5-8 is described as a unitary housing 12, requiring the attachment of separate end cones 22. However, the configuration of the housing 12 is often dependant on the method by which substrate 14 wrapped with retention material 16 is inserted into the housing 12. For example, in the embodiments discussed above, substrate 14 wrapped with retention material 16 is inserted into housing 12 through one of the open ends of the housing before end cone 22 is connected to the housing 12. This method is commonly referred to as the "stuffing method". Of course, other housing designs (e.g., sheet of material, two halves of material, and the like) and other methods (e.g., clam shell, wrapping, and the like) exist, and are contemplated, for the housing 12 and for inserting substrate 14 wrapped with retention material 16 into the housing 12, respectively.

Please amend paragraph [0050] beginning on page 11, as follows:

[0050] Other methods include other stuffing methods, the clamshell method, the tourniquet method, and the like. For example, another version of the "stuffing method" is referred to as the "stuffing and resizing method". Here, substrate 14 wrapped with retention material 16 is inserted into housing 12 through one of the open ends of the

housing 12. Next, one or more portions of housing 12 is resized or compressed. Furthermore, one or both of the ends of housing 12 is resized to provide outer shell 30, e.g., via spin-forming and the like. Another commonly used method is referred to as the "clamshell method". Here, substrate 14 wrapped with retention material 16 is placed between two longitudinal halves or clamshells of housing 12, which includes outer shell 30 integrated thereon. Here, the two halves of housing 12 are closed around the assembly and welded together. Similarly, with the tourniquet method, the substrate 14, wrapped with retention material 16, is inserted into housing 12, which is open on one longitudinal edge and which includes outer shell 30 integrated thereon. Here, housing 12 is closed around the assembly and the open longitudinal edge is then welded closed.

[0050.1] Referring now to Figure 9, and as provided above, it is known to provide outer shell 30 formed as part of housing 12.

Please amend paragraph [0052] beginning at page 12, as follows:

[0052] During assembly with the "stuffing and resizing method" for example, substrate 14, wrapped with retention material 16, is inserted into housing 12 through one of the open ends of the housing 12. End cone insulators 40 are disposed in operable communication with substrate 14 such that inboard ends 42 of the end cone insulators 40 are supported by the substrate 14 and retention material 16. End cone insulators 40 are disposed around substrate 14 either before or after insertion into housing 12. The ends of housing 12 are then resized around end cone insulators 40 to provide outer ~~shell~~ shells 30. For example, housing 12 is resized by spin forming, ram forming, magnetic impulse, and the like. Core 37 is optionally secured to outer shell 30 by, for example, welding, bonding, dimpling, compression of the outer shell 30 on the core 37, and the like.

Please amend paragraph [0053] beginning at page 12, as follows:

[0053] During assembly with the "clamshell method" for example, substrate 14 is wrapped with retention material 16. End cone insulators 40 are disposed in operable communication with substrate 14 (e.g., around at least an end of substrate 14) such that inboard ends 42 of the end cone insulators 40 are supported by the substrate 14 and retention material 16. End cone insulators 40 are disposed around substrate 14 either before or after placing the substrate 14 between two longitudinal halves or clamshells of housing 12. Here, housing 12 preferably comprises integral outer shells 30. The two halves of housing 12 are closed around the assembly and welded together. Core 37 is optionally secured to outer shell 30 by, for example, welding, bonding, dimpling, and the like.

Please amend paragraph [0054] beginning on page 13, as follows:

[0054] During assembly with the "tourniquet method" for example, substrate 14 is wrapped with retention material 16. End cone insulators 40 are disposed in operable communication with substrate 14 such that inboard ends 42 of the end cone insulators 40 are supported by the substrate 14 and retention material 16. End cone insulators 40 are disposed around substrate 14 either before or after inserting the substrate 14 into housing 12 through the open longitudinal edge. Housing 12 is closed around the assembly (retention material 16, substrate 14, and insulator(s) 40) and the open longitudinal edge is then welded closed. Core 37 is optionally secured to outer shell 30 either before or after the outer shells are applied to housing 12.

Please amend paragraph [0055] beginning on page 13, as follows:

[0055] It should be recognized that housing 12 is illustrated by way of example only as including end cone insulator 40 having both screen 35 and inner core or tube 37. Of course, the use of end ~~cones~~ cone insulators with or without one or both of screen 35 and core 37 with housings 12 having integrated end cones 30 are contemplated.

Accordingly and as described above by way of exemplary embodiments, the end cone insulators 40 are configured for use with housings 12 of different designs, with various methods of inserting the substrate 14 into the housing 12, and with various types of substrates 14.